

Amendments to the claims.

1. (Currently Amended) A plant which is a commercially available variety of Salicaceae, Solanaceae, Caryophyllaceae or Brassicaceae and is genetically engineered to overexpress glutamylcysteine synthetase and thereby provides enhanced heavy metal accumulation as compared with a corresponding wild type plant.
2. (Currently amended) A plant according to claim 1 comprising a ~~gene~~ nucleic acid encoding the glutamylcysteine synthetase operably linked to a heterologous promoter.
3. (Currently amended) A plant according to claim 1 which is a ~~member of the brassicaceae family~~ variety of Brassicaceae.
4. (Currently Amended) A plant according to claim 1 which is a *Populus angustifolia*, *Nicotiana tabacum* or *Silene cucubalis*.
5. (Original) A plant according to claim 1 wherein the heavy metal is selected from the group consisting of chromium, molybdenum and tungsten.
6. (Original) A plant according to claim 1 wherein the heavy metal is selected from the group consisting of cadmium and mercury.
7. (Original) A plant according to claim 1 wherein the heavy metal is uranium.
8. (Original) A plant according to claim 1, wherein the enhanced accumulation is at least 50% greater than an otherwise comparable untransformed plant.
9. (Currently amended) A plant according to claim 1, wherein the plant comprises a nucleic acid encoding the glutamylcysteine synthetase operably linked to a heterologous promoter, the plant is a ~~*Brassica juncea*~~ *Populus angustifolia*, *Nicotiana tabacum* or *Silene cucubalis*, the heavy metal is selected from the group consisting of chromium, molybdenum and tungsten and

the enhanced accumulation is at least 50% greater than an otherwise comparable untransformed plant.

10. (Currently amended) A plant according to claim 1, wherein the plant comprises a **gene nucleic acid** encoding the glutamylcysteine synthetase operably linked to a heterologous promoter, the plant is a *Brassica juncea* *Populus angustifolia*, *Nicotiana tabacum* or *Silene cucubalis*, the heavy metal is selected from the group consisting of cadmium and mercury and the enhanced accumulation is at least 50% greater than an otherwise comparable untransformed plant.

11. (Currently amended) A plant according to claim 1, wherein the plant comprises a **gene nucleic acid** encoding the glutamylcysteine synthetase operably linked to a heterologous promoter, the plant is a *Brassica juncea* *Populus angustifolia*, *Nicotiana tabacum* or *Silene cucubalis*, the heavy metal is selected from the group consisting of tellurium and polonium and the enhanced accumulation is at least 50% greater than an otherwise comparable untransformed plant.

12. (Currently Amended) A plant according to claim 1, wherein the plant comprises a nucleic acid encoding the glutamylcysteine synthetase operably linked to a heterologous promoter, the plant is a *Brassica juncea* *Populus angustifolia*, *Nicotiana tabacum* or *Silene cucubalis*, the heavy metal is uranium and the enhanced accumulation is at least 50% greater than an otherwise comparable untransformed plant.

13. (Original) A method for decreasing heavy metal content of a medium, comprising the steps of: (a) identifying a medium as containing an excessive amount of a heavy metal; and (b) growing a plant according to claim 1 in the medium, under conditions wherein the glutamylcysteine synthetase is overexpressed, whereby the plant provides enhanced accumulation of the heavy metal, whereby the heavy metal content of the medium is decreased.

14. (Original) A method for decreasing heavy metal content of a medium, comprising the steps

of: (a) identifying a medium as containing an excessive amount of a heavy metal; and (b) growing a plant according to claim 7 in the medium, under conditions wherein the glutamylcysteine synthetase is overexpressed, whereby the plant provides enhanced accumulation of the heavy metal, whereby the heavy metal content of the medium is decreased.

15. (Original) A method for decreasing heavy metal content of a medium, comprising the steps of: (a) identifying a medium as containing an excessive amount of a heavy metal; and (b) growing a plant according to claim 8 in the medium, under conditions wherein the glutamylcysteine synthetase is overexpressed, whereby the plant provides enhanced accumulation of the heavy metal, whereby the heavy metal content of the medium is decreased.

16. (Original) A method for decreasing heavy metal content of a medium, comprising the steps of: (a) identifying a medium as containing an excessive amount of a heavy metal; and (b) growing a plant according to claim 9 in the medium, under conditions wherein the glutamylcysteine synthetase is overexpressed, whereby the plant provides enhanced accumulation of the heavy metal, whereby the heavy metal content of the medium is decreased.

17. (Original) A method for decreasing heavy metal content of a medium, comprising the steps of: (a) identifying a medium as containing an excessive amount of a heavy metal; and (b) growing a plant according to claim 10 in the medium, under conditions wherein the glutamylcysteine synthetase is overexpressed, whereby the plant provides enhanced accumulation of the heavy metal, whereby the heavy metal content of the medium is decreased.

18. (Original) A method for decreasing heavy metal content of a medium, comprising the steps of: (a) identifying a medium as containing an excessive amount of a heavy metal; and (b) growing a plant according to claim 11 in the medium, under conditions wherein the glutamylcysteine synthetase is overexpressed, whereby the plant provides enhanced accumulation of the heavy metal, whereby the heavy metal content of the medium is decreased.

19. (Original) A method according to claim 13, wherein the medium is soil.

20. (Original) A plant according to claim 1 wherein the plant grows not significantly differently than a corresponding wild type plant under non-heavy metal conditions.

21. (Original) A plant according to claim 4 wherein the plant grows not significantly differently than a corresponding wild type plant under non-heavy metal conditions.

22. (Original) A method according to claim 13 wherein the plant grows not significantly differently than a corresponding wild type plant under non-heavy metal conditions.

23. (Currently Amended) ~~A method according to claim 16 wherein the plant grows not significantly differently than a corresponding wild type plant under non-heavy metal conditions~~  
plant which is a commercially available variety of *Silene cucubalis* and is genetically engineered to overexpress glutamylcysteine synthetase and thereby provides enhanced heavy metal accumulation as compared with a corresponding wild type plant.

24. (Currently Amended) ~~A method according to claim 17 wherein the plant grows not significantly differently than a corresponding wild type plant under non-heavy metal conditions~~  
plant which is a commercially available variety of *Populus angustifolia* and is genetically engineered to overexpress glutamylcysteine synthetase and thereby provides enhanced heavy metal accumulation as compared with a corresponding wild type plant.